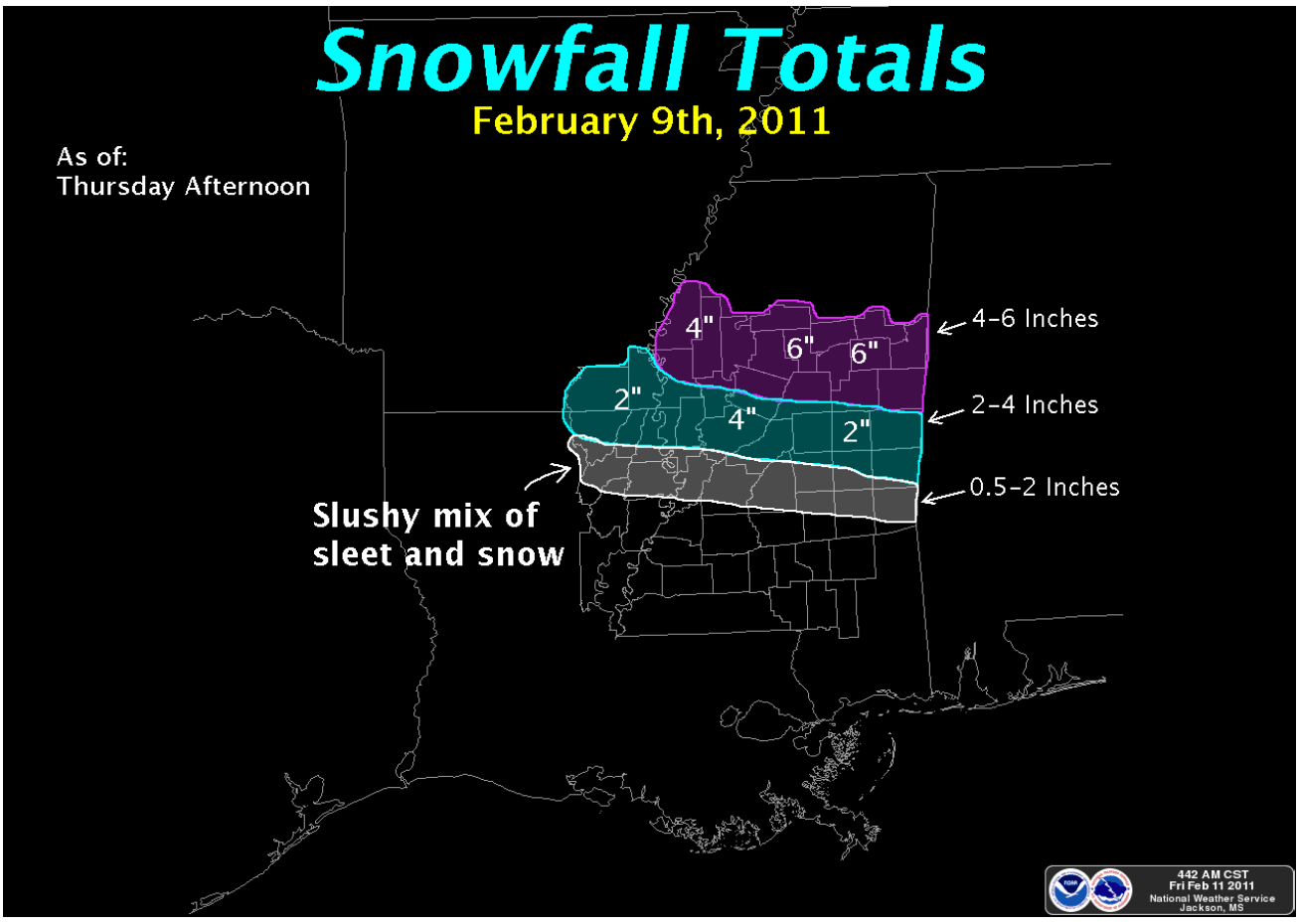
NWS FORM E-5 (11-88) **(PRES. by NWS Instruction 10-924)**	**U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH **February** YEAR **2011**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **03/25/2011**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

X **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

The month of February was a tale of two seasons for the Hydrologic Service Area(HSA), winter and spring. From the 1st to the 9th, temperatures were colder than normal with some winter weather, culminating with a significant snow event for much of the area north of I-20. After the frontal passage on the 9th, high temperatures remained in the 30s and 40s until then 13th. Finally, spring arrived with temperatures warming from the 50s to the 60s and then 70s for the remainder of the month.



On the 1st, a low pressure center over Northeast Texas moved rapidly to the northeast dragging a cold front across the area. The front stalled over the Central Gulf of Mexico. Much colder temperatures moved into the region behind the front. High pressure built into the region on the 2nd and pushed into Virginia by the 4th. From the 4th into the 5th, an upper level disturbance moved northeast from Texas to Tennessee. Also on the 4th, a surface low formed on the stalled front in the Gulf pushing a warm front to the Mississippi Gulf Coast. The low pressure center moved to South Georgia by the morning of the 5th. Some light snow, light freezing rain, and some light rain were reported across the HSA from the 3rd into the 4th. Liquid precipitation amounts in Southeast Mississippi were less than 0.75 inches and less than 0.50 inch elsewhere. Cold air remained over the area on the 5th.

Another cold front moved crossed the region on the 7th. Rainfall ending at 7am on the 7th ranged from 0.25 to 0.75 across the HSA. From the afternoon of the 7th through the 8th, no rainfall was reported; however, by the 9th a low pressure center with an associated cold front moved rapidly across the area bringing a mixture of snow, sleet and rainfall to the HSA. Accumulations of snow and sleet ranged from 0.25 to 2.00 inches along and north of I-20. An area of 2.00 to 4.00 inches of snow occurred between I-20 and Highway 82 and an area of 4.00 to 6.00 inches of snow fell along the highway 82 corridor. Areas south of I-20 had a mix of sleet, snow, and freezing rain with no accumulations of snow, except in northern Jasper and Clarke County, and much of Lauderdale County, where snow amounts ranged from 0.50 to 2.00 inches. Cold high pressure moved in on the 10th and 11th.

The previous front ushered in the final push of very cold air for February. Temperatures began to moderate from the 12th to 14th as the cold, Arctic airmass shunted to the east instead of the Deep South. A mostly dry, cold front moved into Central Mississippi on the 15th and washed out. High pressure moved to the East Coast from the 16th to 18th allowing warm, moist air to return to the HSA. Temperatures edged into the 70s during the day, with lows in the 50s at night. On the 19th, another dry front pushed into North Mississippi and then stalled. On the 20th, the once stalled front moved back to the north as a warm front. Another weak, dry cold front pushed across the area on the 22nd and stalled along the Mississippi Coast. The front pushed back to the north on the 23rd as a warm front, bringing a few light showers to the northern most counties of our HSA.

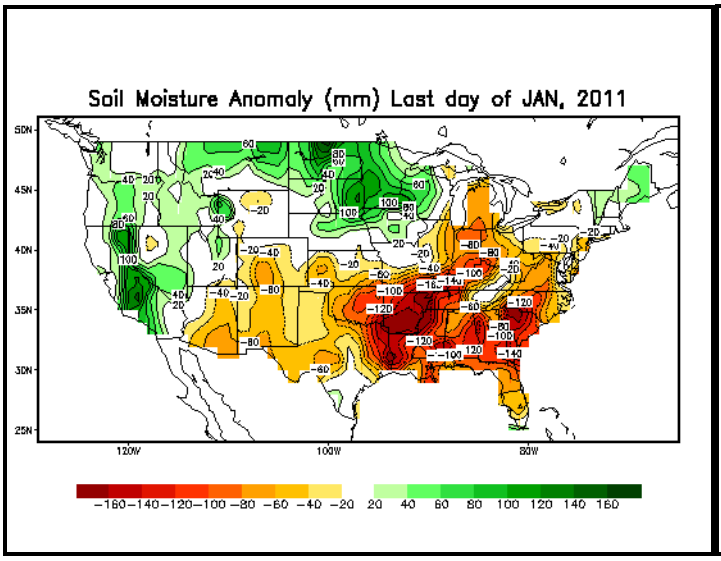
Some much needed rainfall occurred with the passage of a cold front from late on the 24th into the 25th. The front stalled along the Mississippi Gulf Coast on the 26th. Rainfall amounts were heaviest northeast of a Rayville, LA to Laurel, MS line, where 0.50 to 2.00 inches fell. Southeast of this line rainfall amounts were less than 0.50 inches.

In response to an upper level disturbance pushing out of the Southwest U.S., the stalled front along the coast moved rapidly to the north on the 26th. A strong southerly flow brought in warm, moist conditions across the HSA. The upper level system weakened somewhat as it pushed eastward, crossing the region with an associated cold front on the 28th. Rainfall amounts were generally light, with some heavier amounts in East Mississippi up to .75 inches.

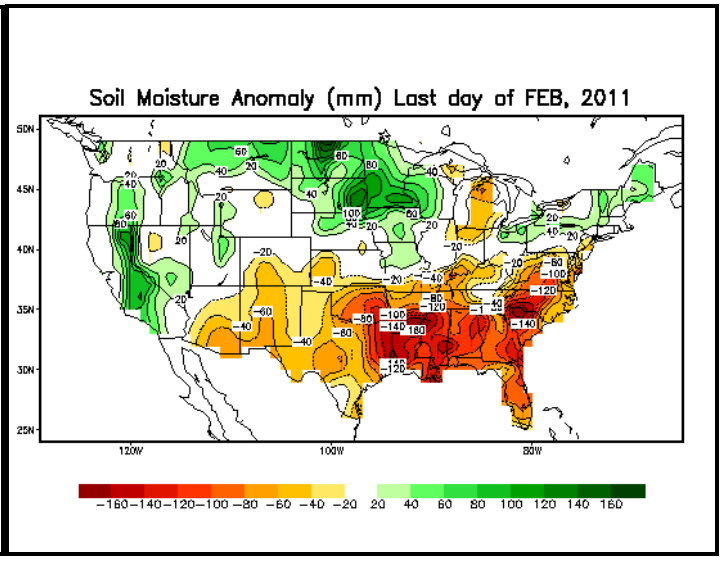
River and Soil Conditions...

The HSA once again had below normal rainfall. The driest region in the HSA was along the Natchez Trace Parkway and portions of Northeast Louisiana and Southeast Arkansas. Rainfall ranged from 25 to 50 percent of normal over this area. Southeast Mississippi was a little wetter but still had rainfall deficits which ranged from 50 to 75 percent of normal.

Soil moisture deficits ranged from 6.00 to 7.00 inches across Southeast Arkansas and into the Middle Yazoo Delta Region. Northeast Louisiana had 5.00 to 6.00 inch deficits while the remaining areas in Mississippi had 4.00 to 6.00 inch soil moisture deficits.



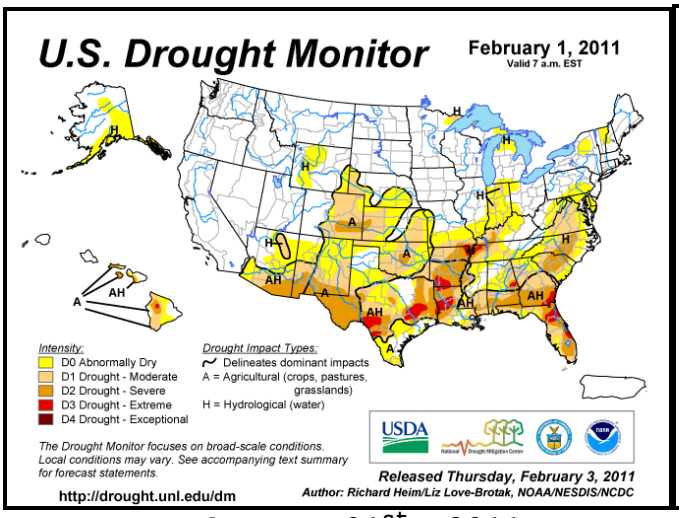
Last day of January 2011



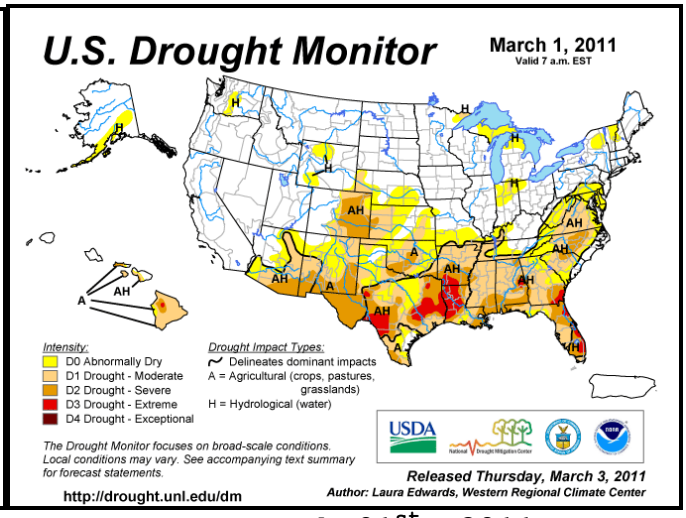
Last day of February

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

A comparison of the February 1st U.S. Drought Monitor to the March 1st U.S. Drought Monitor showed drought conditions had deteriorated over portions of Mississippi, and remained the same over Northeast Louisiana and Southeast Arkansas. Moderate (D1) to Severe Drought (D2) conditions now exist over Southeast Arkansas, Northeast Louisiana, the northwest portions of Mississippi in the WFO Jackson HSA, and portions of Southeast Mississippi. Moderate Drought (D1) conditions now exist over the remainder of Mississippi.

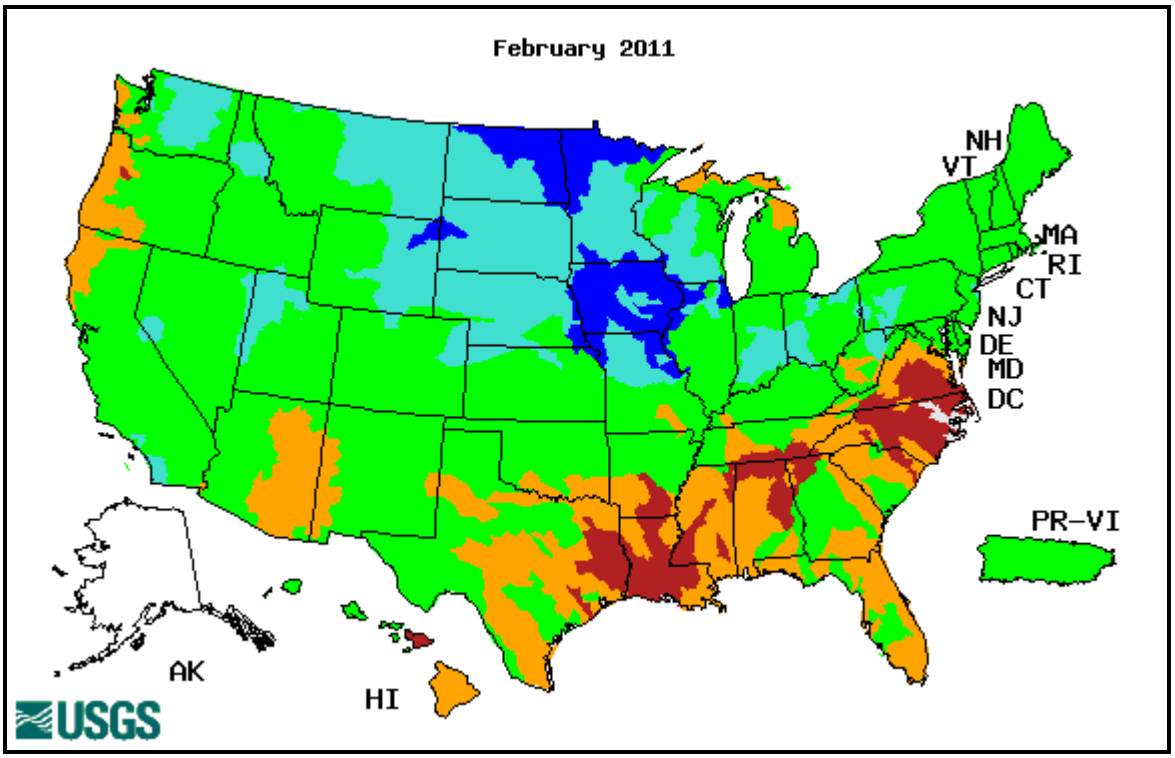


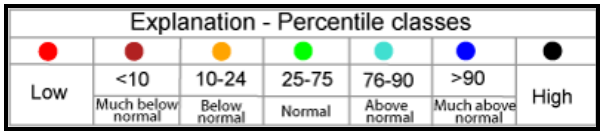
February 01st, 2011



March 01st, 2011

The United States Geological Survey's (USGS) February 2011 river streamflow records were compared with all historical February streamflow records. Stream flows ranged from below much below normal to below normal across the entire Hydrologic Service Area.





Heavy rainfall at the end of January had many of the rivers elevated but well below flood stage at the beginning of February. After a few additional minor rises during the first week of the month, rivers receded for much of the month with some additional minor rises at the end of the month.

The Mississippi River had a minor rise during the first half of the month and then receded until the third week. A significant rise began during the last week of the month.

Based on current soil moisture conditions, current streamflow conditions, and an expected normal rainfall pattern over northern portions of the HSA and a below normal rainfall pattern over southern portions over the next 60 to 90 days:

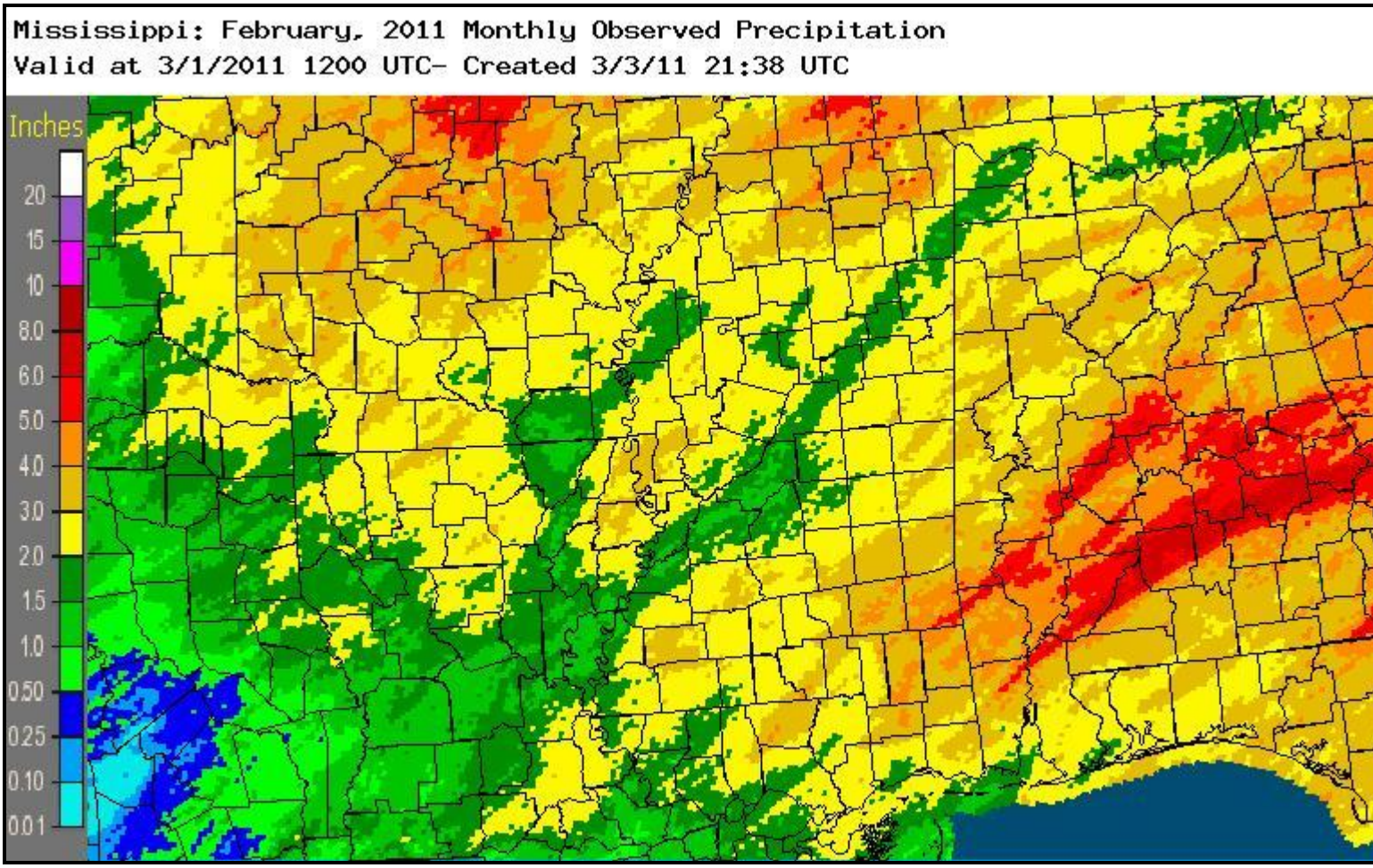
***Pearl River System*:**	**Below Normal. ***
***Yazoo River System*:**	**Below Normal.**
***Big Black River System*:**	**Below Normal. ***
***Homochitto River System*:**	**Below Normal. ***
***Pascagoula River System*:**	**Below Normal. ***
***Northeast LA and Southeast AR*:**	**Below Normal.**
***Tombigbee River System*:**	**Below Normal. ***
Mississippi River:	**Normal.**

*** Note : With this report being written late in March, a single heavy rainfall in March from the 8th to 9th event has changed below normal flood probabilities to near normal. In the case of the Tallahala at Laurel, the highest crest in over 30 years.**

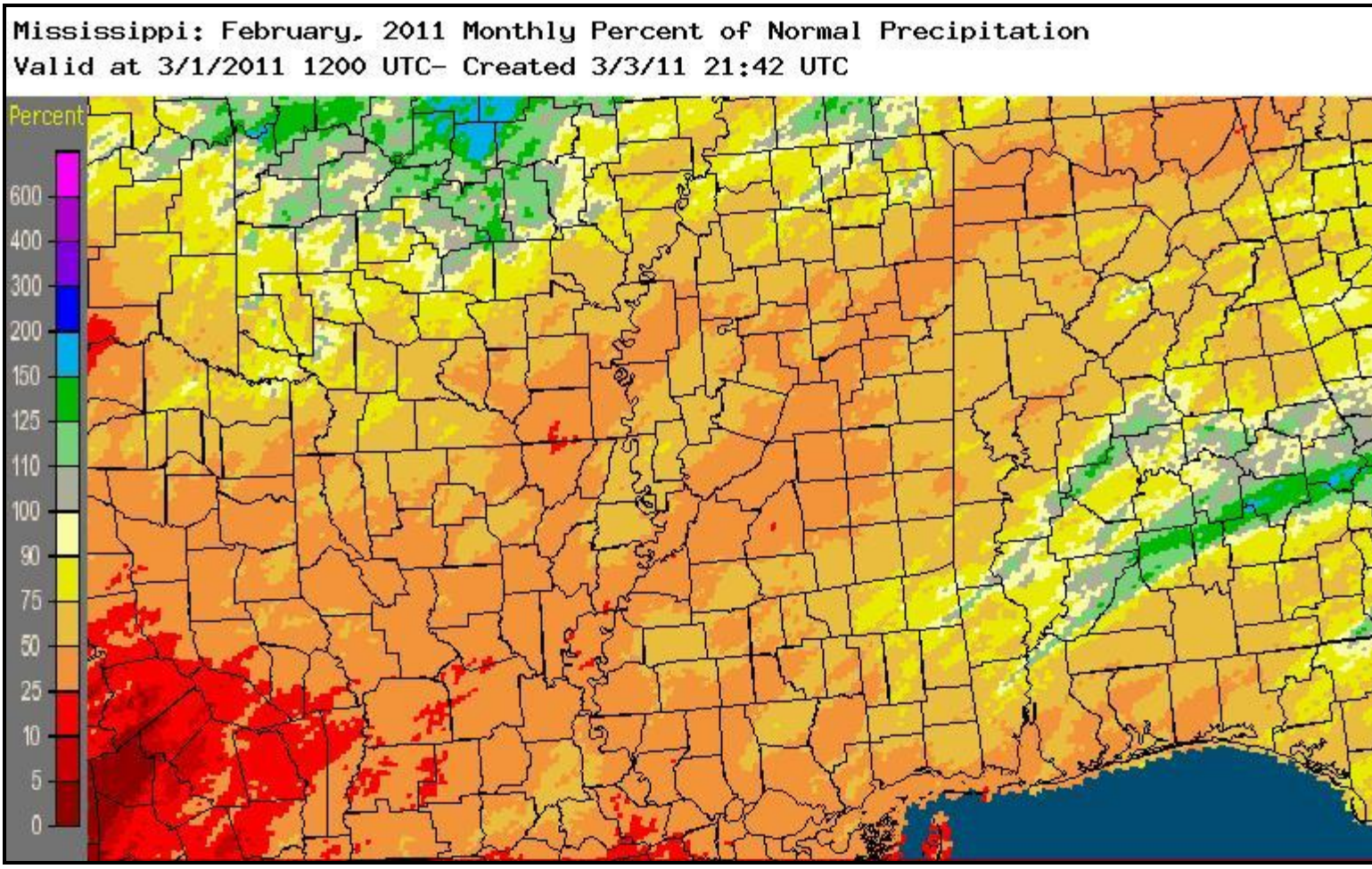
Rainfall for the month of February

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on January 31st until 7 am on February 28th were: 4.93 inches at Sumrall, MS; 4.07 inches at Laurel, MS; 3.98 inches at Hattiesburg, MS; and 3.92 inches at Crandall, MS.

The lowest rainfall totals in the HSA were: 1.27 inches at Red River Lock/Dam #1, LA; 1.56 inches at Ross Barnett Reservoir, MS; 1.62 inches at Clayton, LA; 1.64 inches at Oakley Agricultural Experiment Station (Hinds County), MS; and 1.83 inches at Satartia, MS.



February 2011 Rainfall Estimates



2011 February Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

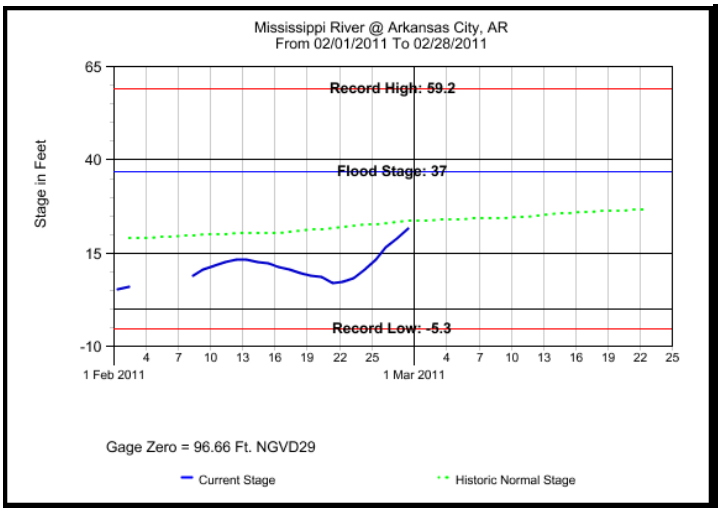
February rainfall for Selected Cities...

City (Airport)	February Rainfall	Departure from normal	2011 Rainfall	2011 Departure from Normal
Jackson, MS	4.48	-2.60	6.38	-3.79
Meridian, MS	2.41	-2.94	6.74	-4.53
Greenwood, MS	2.35	-1.85	4.77	-4.68
Greenville, MS	2.06	-2.64	3.90	-6.22
Hattiesburg, MS	3.73	-1.34	7.67	-4.44
Vicksburg, MS	2.11	-2.78	7.11	-3.87

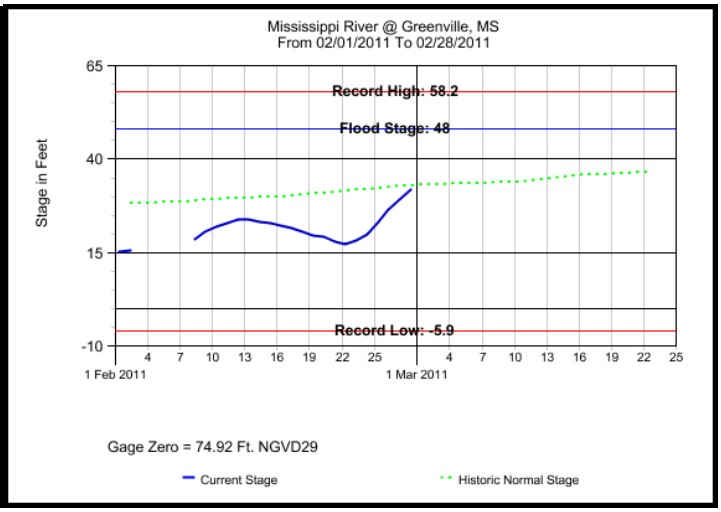
Mississippi River...

Mississippi River Plots for February, 2011

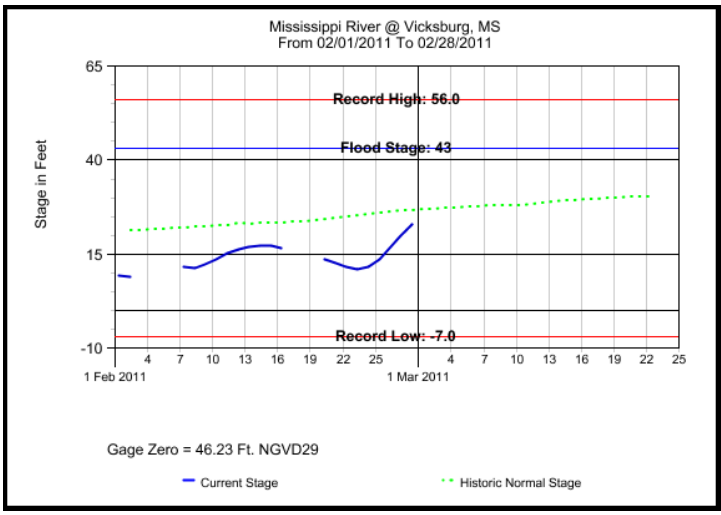
Plots Courtesy of the United States Army Corps of Engineers



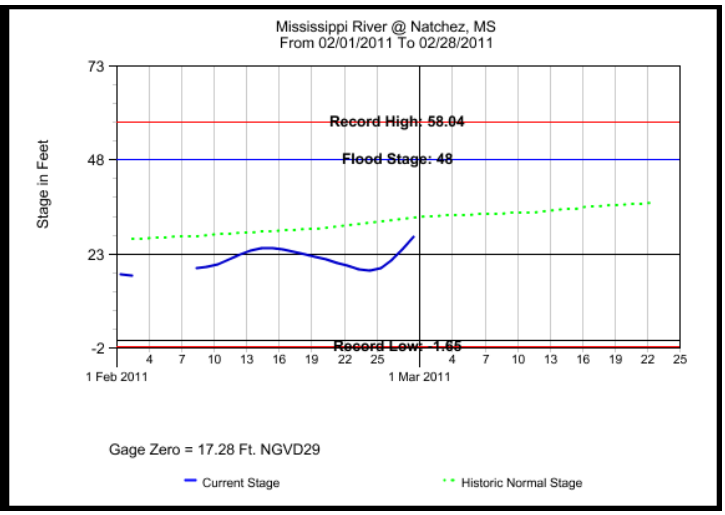
ARKANSAS CITY, MS



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	22.65	02/28/11	5.13	02/01/11
Greenville, MS	48	32.99	02/28/11	15.05	02/01/11
Vicksburg, MS	43	24.71	02/28/11	8.74	02/02/11
Natchez, MS	48	29.28	02/28/11	17.03	02/02/11

Total Flood Warning products issued: 0
Total Flood Statement products issued: 0
Total Flood Advisories MS River : 0
Daily Rainfall Products (RRA'S) issued: 28
Daily River Forecast Products (RVS'S) issued: 28
Daily River Stage products (RVA'S) issued: 28

Marty V. Pope

Service Hydrologist

&

Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.
cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District